REMARKS

Applicant respectfully requests reconsideration and allowance of subject application. Claims 1-4 and 9-18 are pending.

Applicant thanks the Examiner for the detailed analysis presented in the current Office Action.

Claim Rejection Under 35 U.S.C. § 102

Claims 1-4 now stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,704,730 to Moulton et al. (hereinafter, "*Moulton*"). Applicant respectfully traverses the rejection.

Claim 1 is reproduced below:

> 1. A method comprising:
>
> storing files across multiple computers in a distributed file system;
>
> making changes to certain files;
>
> collecting the changes that are made to the certain files stored in the distributed file system; and
>
> digitally signing the changes in batch.

Moulton fails to disclose the recited method of claim 1. Namely, *Moulton* fails to disclose "collecting the changes that are made to the certain files stored in the distributed file system" and "digitally signing the changes in batch."

The Office argues that the "collecting" and "digitally signing" acts are disclosed in column 10, lines 50-65 and column 11, lines 1-10, respectively. (Office Action of 3/14/05, page 3). Applicant disagrees.

The excerpt from column 10 merely describes a process 500 (Fig. 6) for comparing a file hash or directory list hash values to existing directory list hash values and the addition of new file or directory list hash values to the database directory list. (*Moulton*, col. 10, lines 49-53). This process 500 includes accumulating a list of file names, file meta-data and file hashes in a directory (step 502), hashing the contents of the directory list (step 504), and checking whether the hash value matches a value already in the database (step 506). Nowhere in process 500 (Fig. 6) is there any discussion of "collecting the changes that are made to the certain files stored in the distributed file system."

The excerpt from column 11 describes a comparison 600 (Fig. 7) of pieces of a computer file with their corresponding hash values. Nowhere in this excerpt is there any discussion of digitally signing, in batch, changes made to certain files stored in a distributed file system, as required by claim 1.

The absence of discussion or teaching of this act in *Moulton* is further admitted by the Office in subsequent sections of the Office Action. On page 5, the Office states "[t]he combination of Moulton and Burns do not teach digitally signing the hash value of the group of hashes." On page 7, the Office notes that "Moulton is silent regarding a digital signature covering at least part of the representations to indicate that the modifications were made by a user with the signature."

For the reasons given above, claim 1 is allowable over *Moulton*. Applicant respectfully requests that the § 102 rejection be withdrawn.

Claims 2-4 are allowable by virtue of their dependency on claim 1.

Claim Rejections Under 35 U.S.C. § 103

Claims 9-16 now stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Moulton* in view of Burns et al., U.S. Patent No. 6,405,315 B1, (hereinafter "*Burns*") and Chan et al., U.S. Patent No. 6,748,538 B1, (hereinafter "*Chan*"). Claims 17-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Moulton* in view of *Chan*. Applicant respectfully traverses these rejections.

Rejection of Claims 9-16

Claims 9 & 14 are reproduced below:

9. In a distributed file system that stores encrypted files across multiple computers, a method comprising:

modifying one or more of the encrypted files;

computing a hash value of each modified encrypted file;

collecting the hash values into a group;

computing a hash value of the group; and

digitally signing the hash value of the group of hash values.

14. One or more computer readable media comprising computer-executable instructions that, when executed, direct a computing device to:

modify individual files stored in a serverless distributed file system;

compute a hash value of each modified file;

collect the hash values into a group; and

digitally signing the group of hash values.

The Office argues that *Moulton* teaches the "computing," "collecting," and "computing" processes set forth in claim 9. The Office asserts these processes are disclosed in column 11, lines 1-10 and Fig. 7, element 310A of Fig. 7, and element 404 of Fig. 5, respectfully. (Office Action of 3/14/05, page 4). Applicant disagrees.

The excerpt from column 11 and Fig. 7 describes and illustrates, respectively, pieces 306 of a computer file (File A) and corresponding hash values 310 both before and after editing a particular piece of the File A. *Moulton* explains that an edit of the File A may produce a change in the file pieces. An example of this is represented in Fig. 7 as changed piece A2-b of file pieces 306A. When this occurs, the hash values that correspond to the changed file pieces must be updated. Therefore, *Moulton* discloses a process for producing an updated record 404A that includes the modified hash value of File A and an update of the particular hash piece that was modified as well (shown as hash A2-b).

Indeed, *Moulton* teaches accounting for modifications that may occur to a single file, and updating hash pieces of that file after a modification occurs. However, there is nothing in the *Moulton* patent that teaches or suggests "computing a hash value of each modified encrypted file; collecting the hash values into a group; [and] computing a hash value of the group." At most, *Moulton* describes a system and process capable of creating a directory of hashed files, such as the File A described above, and accounting for changes in those

hashed files. But the concept of creating a single hash value for a group of hash values of encrypted files is not taught or even remotely suggested.

The disclosures of *Burns* and *Chan* fail to make up for the deficiencies discussed above in relation to *Moulton*. Therefore, Applicant respectfully submits the rejection under § 103(a) is flawed. The Office is respectfully requested to reconsider and withdraw the rejection. Nonetheless, Applicant discusses in the following the additional deficiencies of the obviousness rejection of claims 9-16.

The secondary patent *Chan* discloses a platform (e.g., computer, communication equipment, set-top box) having memory to store multiple software components and a manifest that contains a hash digest of each software component. A processor verifies integrity of the software components by re-computing the digests of the components and comparing them with the digests in the manifest. However, *Chan* does not teach modifying a hash value of each modified encrypted file, collecting the hash values into a group, and digitally signing the group of hash values as recited in claim 9. *Burns* is similarly deficient.

For the reasons give above, claim 9 is allowable over the combination of *Moulton*, *Burns* and *Chan*.

Turning to claim 14, for the reasons given above for claims 1 and 9, *Moulton*, *Burns* and *Chan* do not teach or suggest the features in claim 14.

Claims 10-13 are allowable by virtue of their dependency on claim 9, and **Claims 15-16** are allowable by virtue of their dependency on claim 14.

Applicant respectfully requests that the § 103 rejection of claims 9-16 be withdrawn.

Rejection of Claims 17-18

Claim 17 is reproduced below:

17. A data structure stored on a computer-readable medium comprising:

representations of modifications made to multiple files stored in a distributed file system; and

a digital signature covering at least part of the representations to indicate that the modifications were made by a user with the signature.

A detailed discussion of *Moulton* is provided earlier in this Response. For brevity, that discussion will not be repeated. The Office asserts *Chan* teaches the application of "a digital signature covering at least part of the representations to indicate that the modifications were made by a user with the signature," as set forth in claim 17. In particular, the current Office Action refers to column 4, lines 4-10, of the relied upon patent. The indicted excerpt from *Chan* discloses that a manifest may be input into a one-way hash function to reproduce a resulting digest. That digest is signed to produce a digital signature of the manifest, which can be used to verify the integrity of the manifest itself.

The limitation of the claim is more robust than the relied upon teaching of *Chan*. According to claim 17, not only are the "representations" covered by the "digital signature," but the signing process identifies "that the modifications were made by the user with the signature." *Chan* does not teach this aspect of the

claim. Instead, the signature of the manifest only verifies "the integrity of the manifest itself." (Chan, col. 4, line 9).

For the reasons given above, claim 17 is allowable over *Mouton* in view of *Chan*.

Claim 18 is allowable by virtue of its dependency on claim 18.

Applicant respectfully requests that the § 103 rejection of claims 17-18 be withdrawn.

Conclusion

Claims 1-4 and 9-18 are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of the subject application. If any issue remains unresolved that would prevent allowance of this case, **the Examiner is requested to urgently contact the undersigned attorney to resolve the issue**.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 12-0769 for any additional fees required under 37 CFR §1.16 or under §1.17; particularly, extension of time fees.

Respectfully Submitted,

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